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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,334	01/22/2004	Tetsuro Yamanaka	1204.41800VX1	2680

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EXAMINER
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SASTRI, SATYA B

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/761,334

**Applicant(s)**

YAMANAKA ET AL.

**Examiner**

Satya B. Sastri

**Art Unit**

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. This office action is in response to amendment filed on June 14, 2006. With the addition of claims 4-19, *claims 1-19* are now pending in the application.

2. In view of the amendment, rejection of *claims 1-3* under 35 U.S.C. 102(b) as anticipated by Shah (US 4,462,665) is withdrawn. Rejection of *claims 1-3* under 35 U.S.C. 112, second paragraph is sustained. Additionally, new grounds of rejection presented in this action are necessitated by the amendment.

#### *Previously Cited Statutes*

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. *Claims 1-19* are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Instantly amended claims 1-3 recite polymer B as a vinylic polymer having at least one nitrogen atom in a molecular side chain. It is unclear how this nitrogen atom in the side chain alone can afford intermolecular hydrogen bond in the molecular side chain and/or in a molecular skeleton. Such nitrogen atoms in the side chain can at best result in

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intermolecular hydrogen bond in the molecular side chain only and not in the molecular skeleton.

5. ***Claims 1, 3, 5, 9, 11, 17*** are rejected under 35 U.S.C. 102(b) as anticipated by Rhein et al. (US 5,612,417).

Prior art to Rhein et al. discloses a molding material with a high degree of transparency comprising a compatible mixture of 1-99% by wt. of copolymer P that contains 1-20% by wt. of acrylic acid or methacrylic acid and 99-1% by wt. of polymethacrylate polymer PM comprising 80-100% by wt. of methyl methacrylate (MMA) and 0-20% by wt. of comonomers copolymerizable with MMA. Such comonomers include acrylic monomers with nitrogen atoms in the side chains, such as acrylonitrile and methacrylonitrile (claims 1 and 3). Working examples disclose the formation of a molded slab/sheet from the molding composition. Given that the disclosed genus of the comonomers for polymer PM is small, instant claims are anticipated by the prior art.

It is the examiner's position that the polar carboxylic acid groups on one polymer P are inherently capable of interacting with the polar nitrile groups of PM through intermolecular hydrogen bonding thus producing pseudo-crosslinked resin.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. **Claims 2, 6, 8, 13, 14 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhein et al. (US 5,612,417).

Prior art to Rhein et al. is presented above in paragraph 6 and is incorporated herein by reference.

The difference between the prior art and the instant invention is that the prior art does not disclose a film from molding composition, amount of total light transmittance, refractive index or the molecular wt. of the copolymers.

The prior art discloses the formation of a slab/sheet with high transparency from compatible polymer alloys. Such materials must be capable of forming films by solution casting that would be highly desirable from the standpoint of extremely high transparency given that high transparency is seen even when molded as thick slabs. Thus, it would have been obvious to a skilled artisan at the time the invention was made to mold such alloys as extremely transparent films and thereby obtain the instant invention.

With regard to the molecular wts. of the copolymers, the working examples suggest the use of copolymers with molecular wts. within the instantly claimed range. Given that the polymers are prepared by addition polymerization mechanism, such polymers have molecular wts. typically within the instantly claimed range. Additionally, given that the polymeric alloys are disclosed as being highly transparent, it is the examiner's position that the transparency and the amount of total light transmittance and refractive index must intrinsically be within the instantly claimed range. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

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***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri at (571) 272 1112.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached at (571) 272 1114.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
SATYA SASTRI

August 28, 2006

  
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SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700